

FOOTNOTES

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What is claimed is:

1. A method for applying multi-resolution boundary encoding to region based still image and video encoding, comprising:

dividing an original image into a plurality of regions, wherein a plurality of boundaries associated with the plurality of the regions is detected;

encoding each of the plurality of the boundaries, whereby each of the plurality of the boundaries contains different resolution coefficients;

decomposing each of the plurality of the regions in the original image into one or more subbands using the plurality of the boundaries with the highest resolution coefficients;

successively decomposing each of the plurality of the regions in a subband with lower resolution coefficients into one or more subbands using the plurality of the boundaries with lower resolution coefficients;

transmitting boundary and image information with the lowest resolution coefficients; and

successively transmitting boundary and image information with higher resolution coefficients.

2. The method of claim 1, wherein the encoding step includes encoding each of the plurality of the boundaries by two periodic wavelet series, whereby each of the plurality of the boundaries contains different resolution coefficients in each of the two periodic wavelet series.

3. The method of claim 1, wherein the decomposing step includes decomposing each of the plurality of the regions in the original image into four subbands using a region based subband encoding scheme.

4. The method of claim 3, wherein the decomposing step includes decomposing each of the plurality of the regions in the original image into a subband using low pass horizontal and low pass vertical frequency filters.

5. The method of claim 3, wherein the decomposing step includes decomposing each of the plurality of the regions in the original image into a subband using high pass horizontal and low pass vertical frequency filters.

6. The method of claim 3, wherein the decomposing step includes decomposing each of the plurality of the regions in the original image into a subband using low pass horizontal and high pass vertical frequency filters.

- 1 13. The apparatus of claim 11, wherein the means for decomposing step includes means for
2 decomposing each of the plurality of the regions in the original image into four subbands using a
3 region based subband encoding scheme.
- 4 14. A computer readable medium providing instructions for applying multi-resolution boundary
5 encoding to region based still image and video encoding, the instructions comprising:
6 dividing an original image into a plurality of regions, wherein a plurality of boundaries
7 associated with the plurality of the regions is detected;
8 encoding each of the plurality of the boundaries, whereby each of the plurality of the
9 boundaries contains different resolution coefficients;
10 decomposing each of the plurality of the regions in the original image into one or more
11 subbands using the plurality of the boundaries with the highest resolution coefficients;
12 successively decomposing each of the plurality of the regions in a subband with lower
13 resolution coefficients into one or more subbands using the plurality of the boundaries with lower
14 resolution coefficients;
15 transmitting boundary and image information with the lowest resolution coefficients; and
16 successively transmitting boundary and image information with higher resolution coefficients.
- 17 15. The computer readable medium of claim 14, wherein the instructions for encoding step
18 includes encoding each of the plurality of the boundaries by two periodic wavelet series, whereby
19 each of the plurality of the boundaries contains different resolution coefficients in each of the two
20 periodic wavelet series.
- 21 16. The computer readable medium of claim 14, wherein the instructions for decomposing step
22 includes decomposing each of the plurality of the regions in the original image into four subbands
23 using a region based subband encoding scheme.
- 24 17. The computer readable medium of claim 16, wherein the instructions for the decomposing
25 step includes decomposing each of the plurality of the regions in the original image into a subband
26 using low pass horizontal and low pass vertical frequency filters.
- 27 18. The computer readable medium of claim 16, wherein the instructions for the decomposing
28 step includes decomposing each of the plurality of the regions in the original image into a subband
29 using high pass horizontal and low pass vertical frequency filters.

1 19. The computer readable medium of claim 16, wherein the instructions for the decomposing
2 step includes decomposing each of the plurality of the regions in the original image into a subband
3 using low pass horizontal and high pass vertical frequency filters.

4 20. The computer readable medium of claim 16, wherein the instructions for the decomposing
5 step includes decomposing each of the plurality of the regions in the original image into a subband
6 using high pass horizontal and high pass vertical frequency filters.

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